
PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Enhance North Fork John Day River Subbasin Anadromous Fish Habitat

BPA project number: 20131

Contract renewal date (mm/yyyy):

☐ **Multiple actions?**

Business name of agency, institution or organization requesting funding

Confederated Tribes of the Umatilla Indian Reservation

Business acronym (if appropriate)

CTUIR

Proposal contact person or principal investigator:

Name Gary James

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NPPC Program Measure Number(s) which this project addresses

7.6, 7.7 and 7.8

FWS/NMFS Biological Opinion Number(s) which this project addresses

Not Applicable

Other planning document references

John Day River Basin Fish Habitat Improvement Implementation Plan, pages 11, 20 and 29 (Stuart, 1988).

John Day River Subbasin Fish Habitat Enhancement Project, BPA Project # 84-21 Statement of Work, pages 1 and 2 (Neal, 1996).

Stream Restoration Program for the North Fork Subbasin of the John Day River, pages 1, 23, 31 and 32 (OWRD, 1992).

Wy-Kan-Ush-Mi-Wa-Kish-Wit -Volume 1, pages 5B-12 through 5B-14 and Volume 2, page 40 (CRITFC, 1995).

Short description

Increase production of indigenous wild stocks of spring chinook salmon and summer steelhead within the North Fork of the John Day River Subbasin.

Target species

The following anadromous species: indigenous wild spring chinook salmon and summer steelhead; resident fish (including bull trout) and wildlife will also benefit from habitat enhancements proposed under this project.

Section 2. Sorting and evaluation

Subbasin

North Fork of the John Day

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input checked="" type="checkbox"/> Anadromous fish <input type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input checked="" type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
8402100	John Day River Subbasin Fish Habitat Enhancement	Will complement project by integrating existing on-the-ground efforts into a comprehensive watershed management approach. Both projects will operate independently, but function as part of an interdependent program.
9137	John Day Watershed Restoration	Will complement project by integrating existing on-the-ground efforts into a comprehensive watershed management approach. Both projects will operate independently, but function as part of an interdependent program.
9605300	North Fork John Day River Dredge Tailings Restoration	Will complement project by integrating existing on-the-ground efforts into a comprehensive watershed management approach. Both projects will operate independently, but function as part of an interdependent program.
8710001	Umatilla River Basin Anadromous Fish Habitat Enhancement Project	Will share personnel, vehicles and equipment.
9604601	Walla Walla Basin Habitat Enhancement	Will share personnel, vehicles and

		equipment.
9608300	Grande Ronde Basin Habitat Enhancement	Will share personnel, vehicles and equipment.

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
	Not Applicable - "New", Proposed Project	

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Implement habitat enhancements on private properties in the North Fork of the John Day River Subbasin.	a	Pre-construction preparation:
			Sub-task a.1. Prepare grant proposals and cost-share agreements.
			Sub-task a.2. Develop easements for proposed habitat enhancements.
			Sub-task a.3. Conduct cultural/archeological surveys in proposed project areas (Section 106 Compliance).
			Sub-task a.4. Complete project(s) design(s) and layout(s).
			Sub-task a.5. Solicit bids and award sub-contracts for proposed enhancements.
		b	Implement habitat enhancements.
			Sub-task b.1. Construct riparian corridor fencing.
			Sub-task b.2. Plant native grasses, shrubs and trees in project areas.
			Sub-task b.3. Control noxious weeds in project areas.
		c	Conduct post-implementation final reviews to insure sub-contract conformity.
2	Collect pre and post-project data to quantify short and long-term effects of habitat enhancements in the North Fork of the John Day Subbasin.	a	Conduct habitat surveys in proposed habitat enhancement areas.
		b	Conduct biological inventories within proposed and existing habitat enhancement project areas to determine anadromous fish abundance.
		c	Establish photo point and stream channel transects to measure changes in channel

			morphology and vegetative response.
		d	Sample aquatic macroinvertebrate populations to document response to habitat enhancements.
		e	Deploy thermographs and obtain June through September stream temperature data.
3	Continue watershed planning, scoping and education processes to identify impacts, attain local solutions to detrimental land use practices, and promote support of habitat enhancement measures in the North Fork John Day River Subbasin.	a	Provide oral presentations, workshops, tours, scoping meetings and other community outreach efforts to landowners, school groups, special interest groups and agency personnel.
		b	Produce educational materials for display and public distribution.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	2/2000	1/2001	salmonid and macroinvertebrate utilization in enhancement areas	increased annual salmonid and macroinvertebrate utilization trends	80.00%
1	2/2000	1/2001	native plant species abundance and survival	increased annual native vegetation recovery trends	
1	2/2000	1/2001	streambank stability	increased annual streambank stabilization trends	
1	2/2000	1/2001	solar input into stream channel	decreased annual riparian solar input trends	
1	2/2000	1/2001	stream channel morphology	decreased annual channel width to depth ratio trends	
2	2/2000	1/2001		N/A	8.00%
3	2/2000	1/2001		N/A	12.00%
				Total	100.00%

Schedule constraints

Possible constraints may include delays in securing conservation easements due to longer than anticipated negotiations with landowners.

Completion date

Not Applicable

Section 5. Budget

FY99 project budget (BPA obligated): \$0

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel		%23	47,500
Fringe benefits		%6	13,300
Supplies, materials, non-expendable property		%27	55,000
Operations & maintenance	Not Applicable - New Project Proposal.	%0	
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		%0	
NEPA costs		%0	
Construction-related support		%0	
PIT tags	# of tags:	%0	
Travel		%4	7740
Indirect costs		%20	42,004
Subcontractor	Fence construction, noxious weed control, and tree planting	%19	40,000
Subcontractor		%0	
Other		%0	
TOTAL BPA FY2000 BUDGET REQUEST			\$205,544

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
CTUIR	Partial salary for Fisheries Program Manager, Project Leader, Habitat Technician, Office Manager and Secretary	%21	\$55,106
BIA	Training and Per Diem	%0	\$600
		%0	
		%0	
		%0	
		%0	
		%0	
Total project cost (including BPA portion)			\$261,250

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	\$210,000	\$215,000	\$220,000	\$225,000

Section 6. References

Watershed?	Reference
<input type="checkbox"/>	Beschta, R.L., Platts, W.S., and Kaufmann, B. 1991. Field Review of Fish Habitat Improvement Projects in the Grande Ronde and John Day River Basins of Eastern Oregon.
<input type="checkbox"/>	Columbia River Inter-Tribal Fish Commission. 1995. Wy-Kan-Ush-Mi-Wa-Kish-Wit Spirit of the Salmon. Columbia River Anadromous Fish Plan of the Nez Perce, Umatilla, Warm Springs and Yakima Tribes. Portland, Oregon.
<input checked="" type="checkbox"/>	James, G. 1984. John Day River Basin-Recommended Salmon and Steelhead Habitat Improvement Measures. Confederated Tribes of the Umatilla Indian Reservation, Mission, Oregon.
<input type="checkbox"/>	Neal, J.A. 1996. John Day River Subbasin Fish Habitat Enhancement Project Statement of Work and Budget. John Day, Oregon.
<input type="checkbox"/>	Neal, J.A. November 30, 1998. Personal comment stated in a phone conversation.
<input checked="" type="checkbox"/>	Northwest Power Planning Council. 1990. Columbia Basin System Planning-Salmon and Steelhead Production Plan for the John Day Basin. Northwest Power Planning Council, Portland, Oregon.
<input type="checkbox"/>	Olsen, E.A., Lindsay, R.B., and Smith, B.J. 1984. John Day River Habitat Enhancement Evaluation Annual Progress Report. DOE/BP-294, Bonneville Power Administration, Portland, Oregon.
<input type="checkbox"/>	Olsen, E., Pierce, P., McLean, M., and Hatch, K. 1992. Stock Summary Reports for Columbia River Anadromous Salmonids-Volume II: Oregon subbasins above Bonneville Dam. DOE/BP-94402-2, Bonneville Power Administration, Portland, Oregon.
<input checked="" type="checkbox"/>	Oregon Water Resources Department. 1992. Stream Restoration Program for the North Fork Subbasin of the John Day River.
<input type="checkbox"/>	Reeve, R. 1988. A Low Maintenance Fence "from" Groundwork-Wasco County Soil & Water Conservation District Newsletter. Wasco County Soil and Water Conservation District, Oregon.
<input type="checkbox"/>	Sanchez, J. December 7, 1998. Personal comment stated in a phone conversation.
<input type="checkbox"/>	Sanchez, J., Dougan, J., Frazier, B., Metz, R., and Scheeler, C. 1988. North Fork John Day River and Tributaries-Fish Habitat Improvement Implementation Plan. BPA Project Number 84-8, Bonneville Power Administration, Portland, Oregon.
<input checked="" type="checkbox"/>	Stuart, A. and Williams, S.H. 1988. John Day River Basin Fish Habitat Improvement Implementation Plan. BPA Project Number 84-21, Bonneville Power Administration, Portland, Oregon.
<input checked="" type="checkbox"/>	Northwest Power Planning Council. 1990. Columbia Basin System Planning - Salmon and Steelhead Production Plan for the John Day Basin. Northwest Power Planning Council, Portland, OR.
<input type="checkbox"/>	USDA, Forest Service-Intermountain Region Wildlife Management. 1985. Aquatic Ecosystem Inventory-Macroinvertebrate Analysis, Chapter 5 Aquatic Macroinvertebrate Surveys "from" Fisheries Habitat Surveys Handbook. R-4 FSH 2609.23. Provo, Utah.
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	
<input type="checkbox"/>	

PART II - NARRATIVE

Section 7. Abstract

Funds are being sought to improve anadromous salmonid habitat on private lands, provide educational outreach opportunities and monitor habitat enhancements in the North Fork of the John Day Subbasin.

The project goal is to protect and enhance habitat for improved natural production of indigenous, wild spring chinook salmon and summer steelhead in the John Day River Basin. Project objectives include public scoping and education, implementation of habitat enhancements, and monitoring habitat improvements.

This project is consistent with NPPC Measure Numbers 7.6, 7.7 and 7.8. The project entails coordinated, cooperative efforts to protect and improve anadromous fisheries habitat on a comprehensive watershed management basis. Improved habitat quality will provide increased juvenile and adult freshwater survival and result in greater offspring out-migration.

Habitat limiting factors have been identified by the tribes and agencies in various documents over the past 15 years. This information will be relied upon to assist the project with prioritization of habitat needs. The CTUIR will implement passive, natural recovery processes in combination with intensive native revegetation efforts to restore anadromous fish habitat on private lands in the North Fork of the John Day River Subbasin.

Short-term (three to five years) project effects shall include native plant community recovery, increased stream bank stability, and increased stream channel shading. Long-term (25 to 100 years) project effects shall include changes in hydrological features, vegetation succession, channel narrowing, cooler stream temperatures, reduced sediment input, increased wood recruitment, greater riparian and in-stream habitat diversity, and increased bird, mammal, macroinvertebrate and salmonid populations.

Pre and post-project monitoring shall include: (1) stream channel transect measurements, (2) summer (with foliage) and fall (without foliage) photo documentation, (3) modified Hankin and Reeves physical surveys, (4) summer and fall macroinvertebrate sampling, (5) biological sampling, and (6) stream temperature monitoring. Project success will be evaluated by changes in: (1) channel width to depth ratios, (2) vegetative response, (3) riparian solar input, (4) pool to riffle ratios, (5) macroinvertebrate and salmonid abundance and diversity, and (6) stream temperatures.

Section 8. Project description

a. Technical and/or scientific background

The John Day River Basin supports the largest remaining, exclusively wild runs of spring chinook salmon and summer steelhead in northeast Oregon (Stuart and Williams, 1988). The North Fork of the John Day Basin supports 70 percent of the distribution of adult spring chinook salmon and 43 percent of the adult steelhead within the John Day Drainage (Sanchez and others, 1988). The goal of the proposed project is to protect and enhance habitat for improved natural production of indigenous, wild spring chinook and summer steelhead in the John Day River Basin. The proposed project is consistent with current Columbia River Basin comprehensive watershed management approaches and Sections 7.6 – 7.8 of the Northwest Power Planning Council's (NPPC) Columbia River Basin Fish and Wildlife Program. Project functions shall include identification of watershed impacts, creation of solutions to land use problems, prioritization and implementation of habitat improvements, providing and participating in educational outreach activities, and monitoring short and long-term effects of habitat enhancements.

Factors limiting anadromous fisheries habitat in the John Day River Basin include low summer flows, high summer and low winter water temperatures, high spring flows, depressed beaver populations, accelerated streambank erosion, excessive stream sedimentation and reduced instream cover (CRITFC, 1995). These impacts are the result of historical and current land management practices including placer mining, livestock overgrazing, irrigation withdrawals, land clearing, road building, logging and stream channelization (Stuart and Williams, 1988). Riparian habitat degradation is the most serious habitat problem in the John Day River Basin with approximately 660 degraded stream miles (CRITFC, 1995). Approximately 261.5 (39 percent) of these impacted stream miles were previously identified within the North Fork of the John Day Subbasin (James, 1984). The Umatilla National Forest has addressed approximately 72.5 miles of the degraded stream reaches in the upper North Fork of the John Day

Subbasin through construction of riparian corridor fencing and ongoing removal of mine tailings (Sanchez, pers. comm.). The Oregon Department of Fish and Wildlife (ODFW) have implemented several habitat enhancement projects within the North Fork Subbasin, including fencing eleven miles of stream on Cottonwood and Fox Creeks, construction of a fish ladder on Fivemile Creek (providing access to 25 miles of previously unavailable spawning habitat), and more recently fencing two miles of upper Camas Creek (Neal, pers. comm.).

Spring chinook currently spawn on the North Fork of the John Day River from the confluence of Cabin Creek (RM 28) to the confluence of Baldy Creek (RM 106) and in tributary areas including the Granite, Camas and Desolation Creek Drainages (Olsen and others, 1992). Summer steelhead are distributed throughout most of the John Day River Basin (Olsen and others, 1992). ODFW have stated that the highest priority streams for habitat improvements on private lands within the North Fork of the John Day Subbasin include 11 stream miles on Desolation Creek (Park Creek to mouth) and 24 miles on Camas and Owens Creeks (4 corners to Owens Creek on Camas Creek and downstream of the Umatilla National Forest Boundary on Owens Creek) (Stuart and Williams, 1988 and Neal, pers. comm.). The NPPC (1990) have also indicated that Camas, lower Desolation and Owens Creeks need riparian improvements. According to the Oregon Water Resources Department (OWRD), enhancement of riparian areas and associated bank storage could contribute to the greatest increase in streamflows (OWRD, 1992). Combined with watershed improvements and beaver dams, enhanced riparian areas could cause streams which are currently intermittent in their headwaters to become perennial. OWRD further states that cumulative effects of improvements in tributary areas could increase flows in the North Fork by as much as 35 cfs.

As indicated previously, much habitat restoration work has been completed and continues to be implemented on Umatilla National Forest Lands within the upper North Fork Subbasin. While ODFW has addressed a considerable portion (64 stream miles) of deficient stream habitat on private lands within the lower North Fork of the John Day River Subbasin, Middle Fork of the John Day River Subbasin and the mainstem John Day River, very little effort (two miles of enhancement) has been directed at private lands within the upper North Fork Subbasin. According to Jeff Neal, ODFW Habitat Biologist (Neal, pers. comm.), ODFW considers the upper North Fork Subbasin to be a high priority, but logistical constraints (i.e. an average driving distance of two hours from ODFW's John Day Office) restrict the agency from seeking landowner agreements in this remote area.

Currently, there is a need to launch an anadromous habitat restoration project in the upper North Fork of the John Day River Subbasin to address habitat deficiencies on private lands. According to OWRD (1992), long-term BPA agreements with landowners for fencing of riparian corridors is just beginning to receive emphasis in the North Fork Subbasin, and landowners have expressed interest. The proposed project will complement existing restoration efforts in the John Day River Basin, including ODFW's John Day River Subbasin Fish Habitat Enhancement Project (BPA Project # 8402100), the Umatilla National Forest's North Fork John Day River Dredge Tailings Restoration Project (BPA Project # 9605300), and the Confederated Tribes of the Warm Springs Indian Reservation's (CTWSR) John Day Watershed Restoration Project (BPA Project # 9137). The project will function as part of an interdependent program by integrating existing on-the-ground efforts into a comprehensive watershed management approach.

The CTUIR are proposing to implement habitat enhancements on tributary areas in the upper North Fork of the John Day River Subbasin, including private lands in the Camas and Desolation Creek Drainages. The project will attempt to implement passive, natural recovery approaches (riparian corridor fencing) in combination with intensive native revegetation efforts to restore anadromous fish habitat in the upper subbasin. ODFW implemented a fencing project on a North Fork Subbasin tributary, Fox Creek, in 1985. After six years of livestock exclusion, sedges and grasses became re-established resulting in: (1) largely stabilized streambanks, (2) channel narrowing by causing sediment deposition, (3) small floodplain development within previously incised channels, and (4) the extent of ecosystem recovery was impressive (Beschta and others, 1991). Specific project locations will be based upon landowner cooperation, and possession of funds to seek and secure landowner agreements. Proposed enhancements shall include construction of eight to twelve miles of riparian corridor fencing and revegetation of four to six miles of stream corridor.

b. Rationale and significance to Regional Programs

The project is consistent with the NPPC's Columbia River Basin Fish and Wildlife Program, Sections 7.6 – 7.8. This project will further the goals set forth in the 1994 FWP by: (1) protecting existing high quality habitat through local coordination and cooperation, (2) promoting watershed and resource management and protection through public outreach and educational efforts, (3) prioritizing actions that maximize the desired result per dollar spent, (4) coordinating data collection, analysis and reporting, and adaptive management to monitor progress in achieving compliance with the Council's habitat objectives, (5) managing riparian and floodplain areas to promote the protection and re-establishment of natural ecological functions and, thereby, protect and improve salmon and steelhead habitat, (6) developing and maintaining local and regional watershed approaches on Tribal ceded lands, (7) encouraging land management activities that maintain the quantity and quality of existing salmon and steelhead habitat, (8) initiating recovery actions where water quality or land management objectives for fish habitat are not being met, (9) improving livestock management by developing, updating and implementing livestock management plans, (10) implementing riparian easements of sufficient width to improve and maintain salmon and steelhead production in privately owned riparian areas and adjacent lands, and (11) seeking cost-share and encouraging the investment of volunteers.

The proposed project is in place, in kind.

c. Relationships to other projects

The proposed project will be integrated with existing habitat enhancement efforts occurring elsewhere in the John Day River Basin. This project will implement improvements on private lands in the upper North Fork John Day River Subbasin. The Umatilla National Forest is currently implementing a mine dredge tailing removal project (BPA # 96-05-300) upstream on forest lands in the upper North Fork Subbasin. ODFW and CTWSR are implementing fencing projects on private properties in other areas of the John Day River Basin (BPA #'s 84-02-100 and 9137). Integration of existing on-the-ground efforts with proposed efforts will provide a more comprehensive watershed management approach in the John Day River Basin. The project will also share personnel, vehicles and field equipment with the BPA funded Umatilla River Basin Anadromous Fish habitat Enhancement Project (#87-100-01), Walla Walla Basin Habitat Enhancement Project (#96-046-01) and the Grande Ronde Basin Habitat Enhancement Project (#96-083-00).

This project is relevant and complementary to the projects indicated above in that it addresses critical protection and restoration of habitat necessary for survival of salmonid fishes in the basin. In the absence of habitat enhancement, all other components will fail. On a broader scale, elevation of John Day River Basin juvenile outmigration numbers through habitat improvements will assist with accomplishing Columbia Basin adult escapement goals. Anadromous fish throughout the Columbia Basin are dependent on availability of quality habitat during all phases of their life cycles. Habitat issues in Columbia Basin subwatersheds must be addressed, so that adequate rearing and spawning habitat is available for continued natural propagation.

The project requires interaction with local, state, federal and tribal interests. In-stream enhancements require fill and removal permits from the Oregon Division of State Lands (ODSL) and U.S. Army Corps of Engineers (COE). This project often coordinates with NRCS and the Umatilla County Farm Service Agency (FSA) to seek local support and assistance in developing cooperative, remedial land use measures.

d. Project history (for ongoing projects)

Not Applicable - "New Project"

e. Proposal objectives

Objective 1. Implement and maintain habitat enhancement projects in the North Fork of the John Day River Subbasin.

Products derived from Objective 1.:

- (1) Long-term conservation easements - approximately three to four agreements will be secured on private lands located within tributaries in the Camas and Desolation Creek Subbasins.
- (2) Cost-share funds – approximately \$55,706.00 in cost-share has been secured (see Section 5. Budget for more detail); grant applications (Governor’s Watershed Enhancement Board [GWEB], USFWS Partners’ for Wildlife, etc.) will also be completed to seek additional cost-share opportunities.
- (3) Pedestrian surveys and reports - will be completed for proposed construction projects by CTUIR Cultural Resources Staff (Section 106 Compliance).
- (4) Subcontracts – will be developed and awarded to the lowest bidder for noxious weed control, fence construction and tree planting.
- (5) Fence construction – approximately eight to twelve stream miles of riparian corridor fencing will be constructed in new project areas.
- (6) Vegetation – approximately 1,000 pounds of native grasses will be seeded and 20,000 indigenous trees planted in new enhancement areas.
- (7) Noxious weed treatment – noxious weeds as indicated on Umatilla County’s Noxious A Weed List will be controlled in stream corridor areas.

Objective 2. Collect pre and post-project data to identify habitat limiting factors and to quantify short and long-term effects of habitat enhancements in the North Fork of the John Day River Subbasin.

Products derived from Objective 2:

- (1) Habitat survey data, biological inventory data, photo point data, stream channel transect data, aquatic macroinvertebrate data and stream temperature data - information will be collected, compiled and discussed in annual BPA Reports.

Objective 3. Continue watershed planning, scoping and education processes by identifying problems and developing creative solutions to land use problems impacting fisheries habitat in the North Fork of the John Day River Subbasin.

Products derived from Objective 3:

- (1) Public tours, workshops, presentations and meetings – local outreach efforts will be conducted.
- (2) Educational materials – hand-outs, brochures, etc. will be produced and provided to the public to promote watershed and habitat education efforts.

f. Methods

- (1) Easements are developed internally by CTUIR Fisheries Staff and Tribal Attorneys. Riparian corridor widths, length of agreement, number of livestock watering gaps and other terms are negotiated with the landowner(s).
- (2) Cost-share funds are generally secured by CTUIR completing grant applications (USFWS, GWEB, etc.) and competing with other grant applicants. Funds from CTUIR and BIA have already been obligated.
- (3) CTUIR’s Cultural Resources Staff conduct file and literature searches, pedestrian surveys and/or archeological excavations in proposed habitat enhancement areas to determine if cultural resources potentially eligible for inclusion to the National Register of Historic Places are present on the site. Final reports documenting their findings are prepared and submitted to the State Historic Preservation Office. All cultural clearances are obtained in compliance with Section 106 of the National Historic Preservation Act.

- (4) Letters are mailed to perspective contractors, requesting participation in pre-bid tours and submission of bids. A subcontract is awarded and notice to proceed issued to the contractor with the lowest bid.
- (5) Both, smooth-wire high tensile fencing and barbed wire fencing will be constructed to restrict livestock from riparian corridors. The use of high tensile fencing has proven to be most effective when livestock are distributed over a vast area (open range) and where tree blowdown is frequent. This type of fencing has a breaking strength and stretching point nearly twice that of barbed wire (Reeve, 1988), and the fluidity of the fence allows the shock of impact to spread throughout the entire fence length and prevent wildlife entanglement. Due to extremely low maintenance, high tensile fence is very cost-effective. Barbed wire fencing is useful when livestock pressure is significant. Barbed wire fencing has been reserved for open country (few trees) with large numbers of cattle in confined pastures.
- (6) Native grass mixes will be developed by Grassland West Seed Company based upon historical vegetation, soil types and project elevation. Grasses will be seeded with a harrow or broadcast seeder. Indigenous trees and shrubs will be planted as cuttings, bareroot stock or tubelings. Bareroot and tubeling trees will be subbasin specific trees produced from seed or cuttings (obtained from proposed project sites) at the CTUIR Native Plant Nursery. Similar efforts in the neighboring Umatilla Basin have reestablished native grasses at a rate of 50 percent or greater, and nursery-produced trees have exhibited survival rates greater than 70 percent. Use of subbasin specific trees will alleviate concerns regarding gene pool contamination of existing native plant communities.
- (7) Umatilla County Level "A" Noxious Weeds growing within project areas will be chemically treated three times a year by Umatilla County Weed Control. CTUIR project personnel will treat other weeds, competing with native revegetation efforts, by burning and with chemical applications as needed.
- (8) Photo points will be established in project areas. All photos will be taken with a 35mm camera and standard 50mm lens. Photos will be taken before project implementation and in the spring and fall of each year after project implementation. A photo point binder containing 35mm slides of riparian recovery will be maintained at the CTUIR Fisheries Office. Photo points generally indicate an upward trend in vegetative recovery, stream bank stability and cover.
- (9) Aquatic macroinvertebrate surveys are an important tool in describing the condition and relative health of the aquatic ecosystem. As a food source they are essential to the growth and production of fish and, because of their strict habitat requirements are very useful as indicators of changes in aquatic habitat (USDA, Forest Service, 1985). The project will utilize site-specific macroinvertebrate data to assist in assessment and improvement of aquatic habitat and water quality within a given stream reach. Macroinvertebrates will be sampled with a Winget-Modified Surber Net in riffles in early summer and early fall each year. Sampling methodology developed by the U.S. Forest Service – Intermountain Region Wildlife Management will be utilized to sample macroinvertebrates. Methods are described in detail in Chapter 5 of the Fisheries Habitat Surveys Handbook (publication #R-4 F5H 2609.23). Macroinvertebrate samples and field support data will be sent to Dr. Fred Magnum at the U.S. Forest Service Aquatic Ecosystem Lab in Provo, Utah for identification and analysis. Data analysis indices shall include: richness, abundance, EPT indices, diversity indices, USFS Biotic Condition Index, modified Hilsenhoff Biotic Index, relative taxon pollution tolerance and voltinism. Data summaries will be included in annual reports.
- (10) Summer stream temperatures will be monitored with Ryan Tempmentors and Ryan 2000 thermographs. Thermographs will collect June through September maximum, minimum and average temperature readings each hour. Temperature data is useful in determining benefits and effects of riparian enhancements.
- (11) Local outreach efforts (scoping meetings, workshops, tours and presentations) will seek public input, address landowner concerns and provide watershed education opportunities.
- (12) Educational materials, such as hand-outs and pamphlets, will be produced and distributed to the public to promote watershed and habitat restoration and protection efforts.

g. Facilities and equipment

Specialized equipment required to implement specific habitat enhancements will be requested under construction contract agreements with subcontractors. A printer was previously purchased under BPA Project Number 87-100-01 to perform duties indicated under that project's statement of work. Pickup trucks to perform field duties and attend meetings external to the office will be leased from General Services Administration (GSA) with BPA and BIA funds. Computers and office space are currently funded with CTUIR and BIA funding. The project will purchase field equipment, non-capital equipment and office supplies on an annual basis as needed. All other major facilities and equipment currently available will satisfy project needs.

h. Budget

Personnel * funded under this project will include:

Fisheries Project Leader – 6 months

Fish Habitat Lead Technician – 6 months

Cultural Technician – 1 month

* Cost-share funds will be provided by CTUIR to cover additional personnel services.

Supplies, materials, non-expendable property funded under this project will include:

Construction materials – trees, grass seed and fencing

Field materials – tools, waders, field gear, sampling equipment, etc.

Lab fees – analysis of macroinvertebrate samples

Repairs and maintenance – repair and maintain BPA property

Office supplies – paper, pens, etc.

Duplication/printing – photo processing, photo copies, color copies, etc.

Public Education Materials – photo enlargement, lamination, display materials

Non-capital Equipment – thermographs, electrical tools, etc.

Travel expenses funded under this project include:

Vehicles – monthly lease of GSA vehicles

Mileage – fuel expenses

Vehicle Insurance

Per Diem** – personnel travel reimbursement

Training** – personnel participation at workshops, meetings, etc.

** Cost-share funds will be provided by the BIA to cover additional per diem and training expenses.

Subcontract work funded under this project will include:

Fence construction – construction of riparian corridor fencing

Noxious weed control – chemical treatment of noxious weeds in enhancement areas

Tree planting – planting cuttings, bareroot trees and tublings in project areas

Section 9. Key personnel

Project Leader: R. Todd Shaw

Education: Lake Superior State University
Bachelor of Science Degree, December 1988
Major: Fisheries and Wildlife Management
Minor I: Chemistry
Minor II: Conservation Law Enforcement

Hocking Technical College
Associate of Applied Science Degree, June 1983
Major: Fisheries and Wildlife
Certificate I: Fisheries Management
Certificate II: Nature Interpretation

Current Employer: Confederated Tribes of the Umatilla Indian Reservation (CTUIR)

Current Responsibilities: Administer Umatilla River Basin Anadromous Fish Habitat Enhancement Project (BPA Project Number 87-100-01). Develop, negotiate and secure riparian easements. Prepare quarterly and annual reports, work plans, budgets, BPA funding proposals, purchase requisitions, and fence construction, operated equipment, tree planting and weed control subcontracts. Pursue cost-share funds and complete grant applications. Prepare fill and removal permit applications. Summarize pre and post-project monitoring data. Supervise, train and direct habitat technicians, seasonal employees and volunteers in maintaining, monitoring and implementing habitat improvements. Serve as tribal spokesperson for habitat conservation and restoration issues at internal and interagency meetings. Prepare and review correspondence related to local, tribal, state and federal environmental regulations. Provide tours and oral presentations to various interest groups to promote habitat protection and restoration. Prepare educational materials and provide outreach efforts to the public, school groups, education service districts, etc. Prepare news articles and releases for tribal and local news media. Conduct and facilitate scoping meetings with land owners and agencies to identify and address land use practices detrimental to salmonid production. Investigate, review and comment on proposed timber sales, range management plans, environmental assessments and impact statements, Tribal Stream Zone Alteration Permit Applications, and COE and ODSL Joint Permit (404 Fill and Removal) Applications.

Recent Previous Employment:

March 1992 – January 1993, Biological Fisheries Technician, U.S. Fish and Wildlife Service, Contaminants Section – Yankton Field Research Station, Yankton, SD.

May 1990 – December 1991, Experimental Biological Aide, Oregon Department of Fish and Wildlife, Bend and Seaside, OR.

June 1988 – September 1989, Fisheries Aide, Indiana Department of Natural Resources, Avoca, IN.

September 1987 - May 1988, Coldwater Hatchery Internship, Lake Superior State University Aquatics Lab, Sault Sainte Marie, MI.

June 1987 – August 1987, Fisheries Aide, U.S. Forest Service, Tongass National Forest, Hoonah, AK.

April 1983 – June 1983, Coolwater Hatchery Internship, Ohio Division of Wildlife, Hebron State Fish Hatchery, Hebron, OH.

Expertise:

Eleven years of fisheries experience including: propagating saugeye, arctic grayling, Kamloops rainbow trout, and atlantic salmon; stream channel typing and habitat classification; designing and implementing habitat enhancements in anadromous drainages; conducting salmon escapement surveys; conducting biological stream surveys; sampling warmwater fisheries populations in large impoundments; conducting fisheries harvest, mortality and survival studies; assisting with acute toxicity studies to assess fish exposures to trace elements; and performance of current responsibilities as indicated above.

Five Relevant Publications or Job Completions:

- (1) 1993 through 1997 Umatilla River Basin Anadromous Fish Habitat Enhancement Project Annual Reports (published by BPA).
- (2) Planned and directed implementation of stream bank stabilization project on lower Meacham Creek in the upper Umatilla Basin.
- (3) Coordinated planting of over 8,000 native trees in Umatilla Basin habitat enhancement project areas.
- (4) Awarded 1,997 yard fence construction contract for construction of riparian corridor fencing in the Squaw Creek and upper Umatilla River drainages.
- (5) Provided presentations to fifth and sixth grade students at the Umatilla-Morrow County Education Service District's Watershed Field Day.

Section 10. Information/technology transfer

Project reports will be produced quarterly and annually. Project personnel will provide oral presentations and field tours throughout the year to demonstrate accomplishments, provide educational opportunities and solicit additional landowner participation. Project personnel will also speak at public forums (local workshops, agency meetings, etc.).

All entities involved in stream habitat alterations (project implementors and regulatory agencies) will conduct pre and post-project tours bi-annually to make recommendations and assess project successes and failures.

Congratulations!